

Applicant has rewritten all claims to define the invention more particularly and distinctly so as to overcome the technical rejections and define the invention patentably over the prior arts.

Applicant requests to replace the Abstract with the following paragraph:

### **Abstract**

A method and system of organizing and accessing Chinese words comprises word storage structures having words indexed by the meanings, by the radicals, by the strokes and by the usage frequency thereof; said storage structures separating the traditional form words and the simplified form words; said storage structures having reference linkage for the two forms; said storage structures using multiple listing for common words; said storage structures having mechanism for relocating words; said method and system utilizing existing regular computer components, utilizing existing Chinese operating systems and word processing programs.

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According to the **Office Action, item # 5,6 and 10**, applicant has corrected spelling and punctuation errors; grammatical and idiomatic errors; complied with MPEP608. Applicant requests to replace the Preamble and the Summary with the following paragraphs:

### **Preamble**

#### **Background of the Invention**

##### **1. Technical Field**

This invention relates to a method for entering Chinese words into a modern computer, and more particularly for accessing Chinese words into a computer with a Chinese language operating system installed.

##### **2. Background Art**

Chinese language is completely different from English. Typewriting Chinese words into a modern computer equipped with an English keyboard was not possible until about twenty years ago. Since then, nearly a thousand inventions to solve this challenging task have patented world wide. Among these inventions, the majority is the kind that adapted the concept of English typing, using the alphabet keys of the keyboard spells out the Latin spelling of Chinese words, or using the keys, each of which is assigned with a few strokes and a few radicals, re-assemble the words from these strokes and radicals.

These methods are currently utilized. However, they have limitations from their origin. For the people, whose first accent is Mandaring or accents similar to Mandarin; the Latin spelling methods do not require a serious training. Due to the fact that many words share similar spelling, to be able to pronounce the words correctly is required before conducting the typing task. It is known that a

same spelling usually stands for numerous words, which are completely different in their meanings, as well as in their appearances; these same pronunciation words are distinguished from each other by the four tones. And more difficult is that a same tone of the same pronunciation represents multiple words in various meanings. To compensate this, to identify the desired word, a list of these words related to the same spelling is shown in a small window, the typist is required to tap in a number associates with the word to select it.

This selecting process reduces the speed of typing. The typist has to try a few attempts to find the target word. For the people, who are not familiar with the standard Mandaring, this spelling method often becomes a mission impossible.

Currently, the majority of professional typists uses the stroke methods, which typewrites the strokes and radicals as components to rebuild words. Or, assigning words with four digit numeral codes, re-assemble words while typing these codes.

It is necessary to point out that the English words are assembled by uniformed alphabets, in a horizontal continuance matter. The Chinese words are two dimentionally assembled by strokes. There are no standard length, no standard angle for the strokes. Each word is irregularly tailored.. Each single Chinese word can be willingly dismantled into a few different sets of strokes. Each single word can be seen as a combination of a few different sets of strokes. Typists have to memorize the orders of the assembly of all the words. After a period of very serious training, professional typists are able to input Chinese words in high speed. The typing task is stressful. Furthermore, Chinese word structures are different between the traditional form and the simplified form. These stroke methods are based on the structure of the word. One stroke method can only work for one form of Chinese language. That gives limitation from their origin. People, who is familiar with Chinese language, who is knowledgeable in computer, but still unable to typewrite, unwilling to learn typing is a common phenomenon. Many intellectuals still keep hand writing. These input methods are not profound strategic solutions.

Each Chinese word is a unique piece of art. To keep its integrity has been demanded for generations. There are some inventions patented to input the integral Chinese words, using the cursor to select the words from a list displayed on a device. This method shared a common requirement with the methods described above to have an internal Chinese vocabulary in storage. Instead of match each typed set of Latin spelling or set of strokes/radicals/codes to match the internal storaged word, this method copies words directly from the word display to the word processor. In addition, these methods substantially reduced the dependence of the English keyboard.

Among the inventions of this kind, a patent issued by China to HouYi-bin and Feng xiu-zen, in July 1989, application number 88103689.7, title: 'Method of Inputting Chinese Words to Computer by Selecting Words on Screen', is the first one to use the technic of selecting items on screen with the pointing device to enter Chinese words to Computer. This invention disclosed the usage of floating windows carrying Chinese words on a Chinese operating system platform.

This invention mentioned using radicals for word group indexing, displaying all the radicals found in the <<New Chinese Dictionary>> on screen, selecting the radical leading to the desired word to having all the words under that radical displaying on screen in a second window. As broadly known by all, radicals are the roots of words, one radical possibly stands for a few hundreds of words or only a few. Without dividing words into level of using frequency, searching will not be easier. Another shortcomming of this invention is that it does not utilize the existing keyboard.

An U.S. patent, No.4951033, issued in Aug.1990 to Sakaguchi, describes a system and method to input integral words. This invention was applied in 1987, a continuation of the application of 1984, when the modern word processor wasn't available, at the time a personal computer had small internal memory. This invention created 20 word groups, each carry 8 words, which is not sufficient for normal practical use. It didn't reveal a method of organizing and searching a large volume of words.

Microsoft's program "Word Perfect"; a publication by Simpson, Allen 'Mastering WordPerfect' have a step by step, clear discription of selecting a word or a symbol from a window having as much as 1400 items. No detail for larger volume. An U.S. patent issued to Rennison et al. in Nov. 2000, No. 6154213, was a giant leap of the innovations of this kind. It offers a effective word searching method that is feasible. It mentioned using "frequency thresholds" to classify words, but no disclosure of the levels of the thresholds, no disclosure the number of the thresholds, no disclosure of a formular to determine the thresholds. It gave a concept of using hierarchy for storing words, but has no disclosure a detail of the organization of the words. It gave examples of word searching, such as using "dog" to find "wolf"; but has no disclosure an actual searching path from the word "dog" to the word "wolf", has no disclosure of the linguistic relation between words for practical use. For a language with ten thousand words, as in Chinese, an efficient word organizing and searching method is the key principle of a succesful typing program.

These inventions described few details of the arrangement of the Chinese words in storage, described no details of an efficient word search method. That xplains the reason of the vacancy of real usage of the inventions of this kind at the present time. Until now, there is no such method available for practical use.

The scope of inventions of this kind is limited, if they have been inspired solely by the available technology. This is the field where technology merges with language and culture. These innovations will be greater, if language knowledge and cultural background come along, endeavor together.

It is necessary to point out that commingling the simplified Chinese words with the traditional Chinese words in writing is prohibitted by law. However, even the head of the state often makes such mistakes, only those linguistic scholars are able to distinguish them. Inventions of this kind should provide a mechanism to separate these two forms clearly, but provide a mechanism to refer them conveniently.

Based on the rapid advanced information technology of the last decade, many miraculous computing tasks have become daily reality. An effective, speedy search method of the Chinese vocabulary is a constant, perpetual demand. The Chinese language has thousands words, each word is not an idle item. Each word has meaning, is a dynamic vigorous unit of art. To list them intelligently, to locate them easily, to select them conveniently, to copy them to the word processor quickly and correctly is a challenging task. Carrying this ancient language to meet demands of 21st century, is an assignment for us to endeavor. This invention synthesizes the culture with the language and technology, inherits the great inspiration of the prior arts, creates an effective word organizing and searching method, makes the challenging task of Chinese word searching and typing becoming an enjoyable journey.

At this stand point, the present invention offers an innovative permanent solution.

## Summary

The present invention is aimed to solve the problems mentioned above. The primary objective of this present invention is to maintain the integrity of the Chinese language. Words are not dismantled into strokes, nor spelled by alphabets. Each word is displayed and entered as a complete integral unit. The meanings of words and radicals are used as leads and indexes for organizing and searching.

The main objective of this present invention is to creat a typewriting method that does not require training. A person with minimum knowledge of computer and capable to read, to write Chinese language is able to typewrite Chinese words using this method offered by this invention, with complete accuracy at the virgin attempt. The pace of typing increases as the typing tasks progress. The traditional way to search a word in a Chinese dictionary is following the orders of the orthodox radicals. It is often a very hectic process. Some words have multiple radicals, some words have hidden radicals, some words have implicit radicals and some words have conjectural ambiguous radicals. Some words have multiple meanings. In a Chinese dictionary, a word appears only once as a principle of a dictionary, despite the extreme difficulty of finding it. A few attempts of trying different radicals is often needed before locating a word or even finding unsuccesfully. This orthodox radical word arrangement principle has restrained the broad use of the traditional Chinese dictionary. Simply adapting it to the vocabulary arrangement for word processing is not wise.

The present invention offers an important objective to arranging the words principally from the meaning thereof, the radical order is secondary. Words also filled into pages according to the shape and the dominant stroke thereof. Under this word classifying principle, frequently used words and 'hard to find' words have opportunity to be listed into multiple pages, greatly reducing word searching time. Words are listed under the meaning thereof, following the thinking of the typist, a string of words naturally appear on screen in sequence as the typing in progress.

A feature is added to have additional blank space in pages for encouraging the user to fill in additional words conveniently for easy locating. Another feature is also added to have words to be relocated or exchanged to pages that are convenient for the typist.

Until the present time, inventions of this class/sub-class, have become practically use are all adapted the concept of English typing, heavily depend on the English keyboard. It is another objective of this invention to minimize the dependence of the keyboard. There is another beneficial objective of the invention to be completely independent from the Chinese word pronunciation, users from different region with different dialect/accent background have an equal opportunity to utilize this method. Furthermore, there are no requirement of memorizing any long set of codes.

There is an additional objective of the present invention. The traditional form and the simplified form of Chinese words are stored in two separated divisions, an user has no fear to type a wrong form of word in a formal written communication. However, these two forms of words exist within same program offered by this invention. It takes only a click on the pointing device or a tap on the keyboard to switch from one to another. It is convenient for the typist to typewrite an article having these both forms of words in some occasions. It may be worthy to mention that with both forms of Chinese words in storage, the traditional and the simplified, easily switching between them, the user may use it as a reference for interpreting. It is broadly known that the radicals are the roots of the Chinese words, as mentioned above, words grouped together according to thier logical meaning, thier social or scientific classes, as well as the radicals. This invention offers a good referencing study material for the user to be more familiar with the language.

**CONCLUSION:**

For all the above reasons, applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore applicant submits that this application is now in condition for allowance, which action applicant respectfully solicits.

**Conditional Request for Constructive Assistance:**

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If, for any reason this application is not believed to be in full condition for allowance, applicant respectfully request the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. 2173.02 and 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Very respectfully,

Hai Shum      Applicant pro se

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